

INCREASING MINORITY BONE MARROW DONORS:
A TRANSMEDIA STORYWORLD TO INCREASE DONOR
POPULATIONS AND SPREAD AWARENESS

A CREATIVE PROJECT SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL
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RACHEL HAYRE-EDWARDS

JENNIFER PALILONIS

BALL STATE UNIVERSITY

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Abstract

CREATIVE PROJECT: Increasing Minority Bone Marrow Donors: A Transmedia Storyworld to Increase Donor Populations and Spread Awareness

STUDENT: Rachel Hayre-Edwards

DEGREE: Master of Arts

COLLEGE: College of Communication, Information and Media

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Finding an unrelated bone marrow donor is hard enough, but for minorities the chances are even more slim. Due to a lack of education and negative misconceptions about donating bone marrow, African Americans aren't necessarily eager to join the donor registry. This creative project sought to 1) build a transmedia storytelling campaign intended to change the perceptions that minorities have about donating bone marrow, and 2) encourage minorities to become donors after those negative perceptions have been changed. This project used transmedia storytelling and design thinking methods to first explore African American students' knowledge of bone marrow donation and willingness to donate. Next, design thinking strategies helped illuminate key concepts and generate ideas for changing people's perceptions of how they think about bone marrow donation. The transmedia storyworld consists of a website, YouTube channel, interactive posters, and a social media campaign that together serve to educate and change people's perceptions of bone marrow donation in an effort to encourage them to become donors.

Introduction

With a stem cell transplant from a living donor, patients with leukemia and other blood diseases stand a better chance of recovery and returning to normal lives. Without a stem cell transplant, their prospects of survival are slim-to-none. In order for a transplant to be successful, the immunity responses of the donor and the recipient must have a matching leukocyte antigen, or HLA system. HLA systems are proteins found in your cells that your immune system uses to recognize which cells belong to your body or those that don't.

Finding a match can be hard, however, because the HLA types in the human population are extremely diffused. Racial and ethnic minorities have the hardest time finding a match because their HLA types have more genetic diversity than Whites. For this creative project, the term *minority* refers to African American minorities. African Americans only have about a 23% chance of finding an unrelated bone marrow match while Whites have a 77% of finding a match (Be the Match, p. 4). One reason for this is that there is a different prevalence of HLA antigens and haplotypes among each ethnicity. Another reason is because there are more Whites in the donor registry than there are African Americans.

The National Marrow Donor Program (NMDP) is the largest registry for potential stem cell donors, with seven million registrants from the United States, Germany, Scandinavia, the Netherlands, and Israel. However, African Americans only have a 30% chance of finding a match within the registry. Ten thousand patients are on the donor registry list every year, and 60% of those people die while waiting for a match:

Because the number of persons of European ancestry in the NMDP registry is more than 10 times that of the other races, whites are much more likely to find a match than persons of other races. The fractions of registrants who can be located, pass the physical

examination, and who consent to make a donation are 0.57 for white registrants, 0.27 for African Americans, 0.35 for Asian Americans, and 0.34 for Hispanics (Ted, 2012, p. 2).

According to blackbonemarrow.com, African Americans “are simply not aware of the need to join the registry” and “are difficult to convince that they need to join and are harder to locate and convince they need to donate once matched” (DeShay, 2013, p. 6). The reasons for this differ among individuals, but research suggests that there are distinct themes that correlate with willingness to donate or not to donate. These themes include lack of awareness about donation, religious myths and misperceptions, distrust of the medical community, fear of premature death, and only being willing to donate to someone they know. This can also be referred to as factors of willingness. These themes can also be grouped into three categories: cultural factors, donor related concerns, and psychosocial influences. Cultural factors include religious beliefs, potential religious objections, family cohesion, and mistrust of either the medical system at large or with the donation itself. Donor related concerns include others’ reactions to potential donation (encouragement to donate or not to donate), how individuals believe others view them as a donor, ambivalence about donation, and satisfaction with the decision to continue towards donation. Psychosocial factors include psychological distress, self-esteem, and health-related quality of life (Switzer, 2013).

This creative project aims to address the fact that many people, especially African Americans, don’t know or want to donate bone marrow. In addition, it aims to change African American’s negative perceptions of bone marrow donation into positive one through a narrative that is educational and encouraging. As DeShay (2013) explains, “our culture is unique; therefore, using mainstream methods are only going to be mildly effective” (p. 11).

The objectives of this creative project are to: 1) build a transmedia storytelling campaign intended to change the perceptions that minorities have about donating bone marrow, and 2) encourage minorities to become donors after changing those negative perceptions. This project also seeks to provide storytelling techniques that are educational, emotional, and persuasive to showcase the importance of being a bone marrow donor. Research by the Department of Medicine at the University of South Carolina has shown that by increasing awareness about the fact that bone marrow donation can save lives, people's willingness to become potential donors will increase. Additionally, higher education levels and age are stronger predictors of willingness than race (Onitilo, 2004). However, there are potential differences in willingness to sign up for the registry among races.

To address these concerns, this project represents an innovative approach to educating people about bone marrow donation that brings together transmedia storytelling and design thinking. First, design thinking strategies were used to explore African American students' knowledge of bone marrow donation and willingness to donate. Next, design thinking strategies helped illuminate key concepts and generate ideas for changing people's perceptions of how they think about bone marrow donation. In addition, a transmedia storyworld comprised of a web of connected media incorporates findings from empathy research with audience members. This storyworld includes a website, YouTube channel, interactive posters, and a social media campaign that together serve to educate and change people's perceptions of bone marrow donation in an effort to encourage them to become donors.

Review of Literature

This creative project draws from research and development in three interrelated fields: studies designed to increase potential African American bone marrow donors, organizations dedicated to increasing awareness about donating bone marrow, and the motives associated with bone marrow donation. This section also provides a brief overview of two strategies influential to this project: transmedia storytelling and design thinking.

Increasing Potential African American Bone Marrow Donors

A study by the Healthy South Carolina Initiative found that a significant number of African Americans were not even aware that there is a higher probability of finding a bone marrow match within the same ethnic or racial group (Laver, 2000). In 1998, the Medical University of South Carolina set out to increase the number of potential bone marrow donors in African American populations by surveying 589 African Americans to determine their attitudes toward becoming potential bone marrow donors. The questionnaire was distributed at churches, community centers, schools, bone marrow drives, health care facilities, work sites, and the South Carolina Health Department. Results showed that participants that had education past high school and participants who were younger were more willing to become bone marrow donors. It also showed that participants with small children were less likely to become donors. Findings also indicated that individuals were twice as likely to donate bone marrow if they knew that bone marrow transplants can save lives and that the chances of finding a match are higher within the same racial group (Laver, 2000).

In 2004, a follow-up study by the Medical University of South Carolina compared the willingness to donate between Whites and African Americans. Researchers concluded that knowledge of a donor registry even existing, such as the NMDP, has a major effect on people's

willingness to donate bone marrow regardless of race (Onitilo, 2004). Researchers also concluded that people in each racial group with higher levels of education and those who were younger were more willing to donate bone marrow. Unlike the first study, this one concluded that there was no difference in the willingness to donate between Whites and African Americans. The study also concluded that gender didn't affect willingness. Of 278 participants, 104 African Americans and 65 Whites indicated "afraid of pain" is the top reason for not wanting to become a bone marrow donor. Whites most often cited "health problems" or "not convenient" as a reason for not donating. Contrary to the first report, this study indicated that "lack of trust in the health care system" was not a significant reason African Americans reported not being willing to donate.

Organizations Dedicated to Increase Awareness of Donating Bone Marrow

Other organizations – such as the Gift of Life, Mixed Marrow, and the Blood and Platelets podcast – all seek to recruit minority and mixed race donors and share the stories of those who have received or donated bone marrow. Gift of Life, founded by Jay Feinberg, is the only bone marrow and stem cell registry that was founded by a transplant recipient. Today, Gift of Life has 363,759 registered donors, 17,522 matches, and has facilitated 3,593 transplants (Gift of Life, 2020). Gift of Life is an associate donor registry of the National Marrow Donor Program and Be the Match. In January 2020, pro-football Hall of Fame player Cris Carter hosted a fundraiser for Gift of Life. Current and former NFL athletes gathered to support Gift of Life's mission and to shed light on the importance of donating bone marrow:

The highlight of the evening was Cris's heartfelt appeal for the football community to share Gift of Life's mission to find donors for every patient in need. He emphasized that the need to diversify the registry is especially urgent. 'We're sick and tired of people in

minority communities dying with cancer,’ said Cris. ‘When are we going to be sick and tired enough to start doing something? You have a chance and it’s fairly simple – swabbing takes five minutes and then you are officially registered (Gift of Life, 2020, p. 9).

Mixed Marrow is a non-profit based in Los Angeles that is dedicated to finding bone marrow and blood cell donors to patients of multiethnic descent. According to their website, their “outreach concentrates on this minority due to the desperate need for registered donors as well as the lack of public knowledge regarding this topic” (Mixed Marrow, 2020, p. 3). The Mixed Marrow website features pictures of patients that are in need of a bone marrow donation.

Blood and Platelets Podcast: Tales of Transplant Survivors is a nine-episode podcast that features three speakers that have received a bone marrow donation. The podcast seeks to 1) tell real stories, 2) fill a void for patients, 3) encourage and give hope to audiences, and 4) inspire those going through cancer treatment.

Motives Associated with Bone Marrow Donation

To further examine the psychosocial factors that may impact individuals' donation decisions and outcomes, a study by Galen Switzer investigated motives for bone marrow donation among 343 unrelated bone marrow donors who donated through the National Marrow Donor Program. Following open-ended questionnaires, six types of donor motives emerged. These motives include cost, potential benefits of donation, empathy of the recipient, helping another person in need, desire to act in accordance with social religious guidelines, and positive feelings about donation (Switzer, 1997, p. 137-147). This study also concluded that gender was the most strongly associated with motive type. Women were most likely to cite expected positive feelings, empathy and the desire to help someone (Switzer, 1997).

In 2007, the Oncology Nursing Forum dove deeper into understanding the motives for why African Americans would or would not donate bone marrow. This study noted several factors, including past and current treatment by the healthcare system, a deep distrust of the medical system in the United States, and pain and fear of physical harm. Smith and Bello (2007) explain that “donor ambivalence was associated with attrition from the national registry, together with anxiety about physical difficulty and negative feelings following donation” (p. 6). The study also explored factors that encourage donor registration. Helping another person or saving someone’s life was highly regarded by many of the focus group participants and emerged as a common theme as to why people would donate. Participants viewed saving lives as altruistic, which is a common motive for why people donate bone marrow. Additionally, knowing personal details about recipients also encourages people to donate.

Cross-Platform, Transmedia Storytelling

Cross-platform storytelling is a marketing strategy that showcases a single narrative across multiple platforms. According to Brown (2019), “It’s about being where your audience is, and today, they’re everywhere” (p. 8). An estimated 72% of consumers reported that they would prefer an integrated approach over the traditional approach (Marrs, 2019). As such, an example of this strategy is using a television and a second device, such as a smartphone or tablet on popular shows like *The Voice*. Audiences are watching the show and are also encouraged to tweet or post on Facebook to continue the discussion online. Bravo reported that this approach increased ratings and social engagements for the network (Marrs, 2019). The prime donor range is 18 to 30 years old, making this audience also known as the digital native age. Digital natives respond best to cross-platform marketing because 1) their attention span is low and they spend a

lot of time switching platforms and 2) they are more resilient in trying new platforms (Brown, 2019).

Empathy Research and User-Centered Design

User-centered design is a four-phase process in which the user and their needs are focused on throughout the design development. These phases include understanding the context in which users may use a system, identifying the user's requirements, designing a solution based on the user's needs, and then evaluating the effectiveness against the user's requirements (User Centered Design, 2020). "Every human decision depends on emotion- every single one," well-known neuroscientist Antonio Damasio stated in regards to the importance of empathy-centered design (User Centered Design 2019, p. 7). Successful user-centered design is dependent on empathy research because it is important to understand the audience's emotional motivators and experiences better so the audience is more engaged and interacting with the content: "You don't want to think like the customer. You want to be the customer" (User Centered Design, 2020, p. 11). The object of this creative project is to change the perceptions of donating bone marrow and identifying the target audience's motivations behind not wanting to donate. Understanding the audience's emotional motivators is important in relation to this project because once those are identified they can be used to generate content that is specific to those motivations.

Project Design

This project was created through a two-phased process. First, empathy research was conducted to identify target audiences and to understand why minorities are often averse to donating bone marrow. Second, a user-centered interview was implemented to better understand how to change the perceptions of donating bone marrow and to increase donor populations. This process applied empathy research, transmedia storytelling, and user-centered design to better understand and define these perceptions to successfully build a transmedia campaign. The following sections chronicle the process used to determine the most effective elements for this campaign.

Phase One: Empathy Research

Twenty African American individual students between the ages of 18 and 30 were interviewed to achieve three main goals: 1) to gain insight about how much knowledge each individual knew about donating bone marrow prior to the interview; 2) to solicit feedback about their perceptions of the concept of donating bone marrow; and 3) to understand what factor of willingness (lack of awareness about donation, religious myths and misperceptions, distrust of the medical community, fear of premature death, and only being willing to donate to someone they know) would be an individual's top reason to not donate bone marrow. Two presentations in front of Ball State University's Black Student Association, recruitment emails via the Ball State University Student Center, and a recruitment email sent from the Ball State University Communication Center were all sampling methods used to attract participants. Each participant volunteered to participate and were not given any incentive to do so. This work was followed by a set of interview questions that were guided from Smith (2019) and are shown in Table 1.

Table 1.

Interview questions that guided ideation sessions.

<i>Interview Questions</i>	
<i>Q1</i>	When you think of donating bone marrow, what comes to mind? Do you associate any groups of people with donating?
<i>Q2</i>	When you think of bone marrow donation, what comes to mind?
<i>Q3</i>	Would the person receiving your bone marrow affect your intention to donate?
<i>Q4</i>	What do you believe are the advantages of donating bone marrow? What do you think are the disadvantages?
<i>Q5</i>	Which of the following reasons of willingness do you think would influence you the most to not be a bone marrow donor? <ul style="list-style-type: none"> a. Lack of education about the topic b. Religious myths or misperceptions c. Distrust of the medical community d. Fear of premature death e. Would only give to someone you know
<i>Q6</i>	Where would you expect to see something promoting bone marrow donation? Where wouldn't you expect something?

These questions are crucial for identifying and fully understanding the target audience's perceptions and knowledge of the topic. Empathizing with these individuals allowed for a more targeted approach to defining how to change people's perceptions of donating bone marrow. The interviews helped identify which factor of willingness the proposed audience answered the most frequently: lack of education about bone marrow donation, distrust of the medical community, and only willing to donate to someone the individual knows. The interviews also gave insight to key words that the proposed audience associated donating bone marrow with (i.e. saving someone's life, helping others, doing something bigger than yourself, and an act of service).

These factors created guidelines for structuring ideation sessions around the perceptions of donating bone marrow.

Phase Two: Ideation

Following semi-structured interviews, the same individuals participated in one of two focus group sessions. These sessions were guided by the following prompts:

- How might we educate audiences about how to become bone marrow donors?
- What type of content would persuade audiences to engage and want to become bone marrow donors?
- How might we use different media sources to appeal to individuals that represent a wide range of knowledge about the topic?
- How can empathy research be used to form an understanding of individuals specific fears and aversion of bone marrow donation with an eye toward creating a solution that directly responds to those concerns and changes negative perceptions and attitudes?

During the two focus groups, ideas were generated to address these “how might we” questions. The ideas were analyzed and then categorized into key themes. Content themes from these sessions included: 1) emotional testimonies, 2) statistics about bone marrow, and 3) alternative ways to donate and participate. These themes created an outline for the type of content that the transmedia storyworld will include.

Figure 1

Focus group results categorized and color-coded to represent three groups of ideas: promotional, statistics, and testimonial content creation ideas.

Promotional	Statistics	Testimonies	
Shedding light on different non-profit orgs pertaining to donating/ blood cancers	Quick facts about bone marrow donation	Promote being inclusive within all communities through personal testimonies	Video documenting someone in the process of donating bone marrow
Together we can	Statistics about donating/ being a bone marrow donor	Create interviews/ conversions with medical professionals	Video of actual bone marrow donation
Have promotional materials at blood banks and plasma centers	Different ways to donate	Establishing a relationship with medical professionals	Before and after donation videos of patients/ donors
Partner with American Red Cross and other blood cancer organizations	State specific statistics about people affected, donor registry #, etc.	Show people donating blood/ plasma then becoming a bone marrow donor	Have celebrity endorsements/ highlight any impacted from this
Commercials- ex: ASPCA	Takes _____ time to become a donor and join the registry	Put faces to the issue at hand- who gets a bone marrow transplant/ who donates	A day in the life videos/ of patients and medical professions doing procedure
	The why behind bone marrow and the need for donors	Highlight children that need/ get bone marrow transplants	
	What is bone marrow used for		

Phase Three: Implementation

After empathy research and ideation sessions concluded, four different platforms were identified to fulfill the creative projects objectives: 1) a website 2) a YouTube channel, 3) interactive posters, and 4) a social media campaign. The following outlines the rationale for each element.

Website. A website was implemented to serve as the heart of the campaign. Websites are effective and serve as a 24/7 online presence and effective way to communicate information. They also allow brands to build recognition and credibility, as well as to reach a wide audience (Parachute, 2019). Having a website for the project is essential because it houses information on how audiences can join the bone marrow registry, contribute monetarily, get involved in volunteer opportunities, explains what a bone marrow donation is, and sheds light on stories of people who are in need of donors.

YouTube. More than 400 billion videos are viewed daily on YouTube. Videos on YouTube draw more attention over traditional content such as text, prove a brand's value to potential consumers by creating videos that address audiences' concerns or generate advice, and demonstrate products and visually display a brand (Hodges, 2019). Ideas generated from both of the saturate and group sessions indicated that videos and testimonies would be an effective way to change the audience's perceptions about donating bone marrow. Having a YouTube channel allows audiences to get a firsthand look at content such as personal testimonies, how the bone marrow procedure looks, building a relationship with medical professionals who perform these procedures, and to see the day in the life of someone who is currently in the process of donating bone marrow.

Interactive Posters. Interactive posters were implemented to create an experience that puts audiences at the heart of the campaign. Consumers value experiences (Ratna, 2020). Millions of people have a smartphone, 2.71 million to be exact. Huge cell phone providers like Apple and Android have added QR scanning capabilities straight into the camera app, making QR codes a part of everyday life (Ratna, 2020). Implementing interactive posters in this project helps to combine graphic content with video content. Ratna reports that “reading something only invokes 10% memory retention whereas watching videos helps viewers retain 95% of the core message” (p. 8). Additionally, Chahai (2015) explains that “interactivity is about putting the consumer at the heart of the campaign. It’s also about memorability; as soon as you interact with the brand you’re three times more likely to remember that brand than you are if you just see it on screen or a poster” (p. 6).

Social Media Campaign. A social media campaign was created for three main platforms: Instagram, Facebook, and Twitter. The optimal donor age is 18 to 30 years old, making the target audiences for the campaign both Gen Z and Millennials. A Millennial is anyone born between 1980 and 1995 and a Gen Z is anyone born between 1996 and the early-mid 2000s. In the U.S. there are roughly 80 million Millennials and 90 million Gen Zs (Millennials vs. Gen Z, 2020). This audience is effective to engage because of their influence, word of mouth referrals, and need to fill a philanthropic destiny (Mittal, 2018). Gen Z and Millennials spend 80% of their time browsing social media on a mobile device so creating content that has minimal copy and colorful images help the content to stand out when users are scrolling. This audience also prefers ephemeral content such as Facebook and Instagram stories that are only available for a limited amount of time. Instagram stories have 250 million daily users and Gen Z engages with this type of content because it allows them to engage without a

paper trial (Contreras, 2017). Creating content to cater to these audiences includes creating live videos, polls, using hashtags to gain exposure, encouraging audiences to tag other users in challenges, and post user-generated content (Contreras, 2017).

Results

Three key themes emerged from initial interviews. These themes helped determine the content for the transmedia campaign by shedding light on the audience's understanding and perception of the topic at hand. These themes include lack of knowledge about donating bone marrow, relationship with bone marrow donation, and stereotypes about donating. The following sections define and characterize each of these key themes.

Many individuals lack sufficient knowledge about bone marrow donation to make informed decisions about becoming donors.

Participants' lack of knowledge about bone marrow was uncovered in 45% of participant interviews and focus groups. These particular participants either didn't know they could donate bone marrow or they associated donating bone marrow to donating plasma or blood. One participant asked, "isn't donating bone marrow when you go to a blood place and get paid to donate it?" During the initial interview, another participant explained their knowledge about the topic at hand and thought that going to a plasma center to donate is the same thing. In addition, one participant stated that she, "didn't even know it was a thing" when asked her perception of the topic. On the other hand, three of the participants that said they had heard about bone marrow donation also said they heard it from popular TV shows like House or Grey's Anatomy and didn't know much about the topic other than its name. This lack of knowledge is important because it allows for a better understanding of why participants aren't registered to donate. This theme helped determine the content for the transmedia campaign. For example, people aren't registered to donate because they have either never heard of it before or don't know the difference between stem cells and plasma. Content that educates audiences on the difference between bone marrow and plasma/blood will help audiences understand the difference and hopefully dispel some misunderstandings surrounding the two procedures. Other content

delivery ideas, such as infographics and statistics, were generated from the ideation session.

These will also be used to educate and tell audiences what bone marrow is, what it can be used for, and how someone can get involved. This theme ultimately represents the notion that participants are not just unwilling to become bone marrow donors. They also may not be donors because they don't know about the topic as a whole. The transmedia campaign directly addresses this theme by including content to help mitigate this lack of knowledge.

Many individuals associate donating bone marrow to be a negative and painful process which prohibits them from registering as a bone marrow donor.

Participants were asked what comes to mind when they think about donating bone marrow. These insights are helpful because they help foster a better understanding of how the proposed audience views the topic and whether any underlying misperceptions exist. One participant said, "I associate donating bone marrow to giving back to something bigger than myself." Another participant said, "I wasn't aware that there are any advantages to donating bone marrow." Several participants also reported that they associate donating bone marrow to be "inconvenient," having "less bone marrow than I started out with," "painful," and "losing a part of me." Seven participants stated that losing time and losing a part of themselves were two things they associated with donating bone marrow. These answers are helpful because phrases like "inconvenient," "painful," or "time consuming" can lead to content creation that changes the narrative to a more positive focus, as well as educates audiences so that these words are less commonly used when talking about bone marrow donation.

Negative stereotypes that many individuals have about bone marrow donation prevent them from understanding the importance of donating bone marrow.

Several stereotypes also emerged during ideation sessions when participants were asked what kind of people come to mind related to bone marrow donation. These stereotypes included

particular groups of people that participants believed were the only group to benefit from a bone marrow donation, groups of particular race participants believed could only receive a bone marrow donation, particular ages that participants believed could benefit from a bone marrow donation, and certain health requirements. Several participants said “children,” “white people,” “someone who is sick,” “women,” “the elderly,” or “someone who isn’t healthy” in regard to what kind of people they associate with bone marrow donation. However, anyone, regardless of age or ethnicity, can receive a bone marrow transplant. Understanding who the proposed audiences believe to be impacted bone marrow transplants further validates how necessary increased awareness and education is to change the negative misperceptions.

Based on the thematic patterns identified above, a transmedia storyworld was developed. The following section showcases the elements of the transmedia campaign, titled *2Marrow*.

2 Marrow: A Transmedia Campaign

The name of the transmedia campaign, *2Marrow*, was established through a play on the word *tomorrow* and the number *two*. It takes two people, the recipient and the donor, for a bone marrow transplant to work, and marrow and morrow are very similar in letters and pronunciation. The transmedia campaign logo 2Marrow uses colors that were chosen to be inviting, and nurturing (see Fig. 2). The name is further explained with the tagline, “by becoming a bone marrow donor today, you could save someone’s life 2Marrow.” This tagline is used throughout the campaign to shed light on the life-saving opportunity someone has when deciding to become a donor. The components of the transmedia campaign *2Marrow* include a website, interactive posters, a YouTube channel, and a social media campaign. The graphic texture to be used across the transmedia campaign is representative of ancient African culture patterns (see Fig. 3). Feedback from a portion of the target audience was given to determine the colors and the logo; however, future work would include more in-depth ideation sessions with the target audience to determine the efficacy of all of the design elements. Each component serves to spread awareness and increase minority bone marrow donors through increased education. It also is intended to change negative perceptions people have with donating bone marrow.

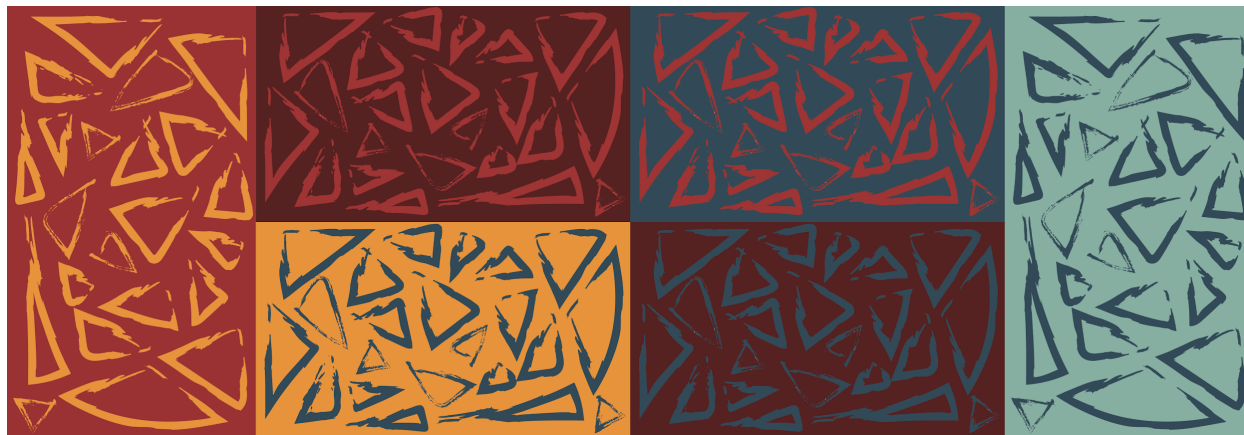
Figure 2.

The different colors inside each letter were used to visualize that it takes more than one piece to get the final outcome.



Figure 3.

The target audience for this transmedia campaign is African Americans and the texture was chosen to invite and represent that particular culture.



Website

A website was created as the central hub for a collection of interconnected media. The interactive website consists of seven pages: *Home*, *About Us*, *Get Involved*, *Learn More*, *Testimony*, and *Give*. The homepage provides a brief description of the importance of donating bone marrow and how minorities have a slimmer chance of finding an unrelated match. A bold graphic of an African American woman holds her hand up in triumph after having just donated (see Fig. 4). Next are four sections that users can explore. The *About Us* page provides an in-depth description of what *2Marrow* objectives are and why there is a need for an organization as such (see Fig. 5). The *Testimony*, as seen in Figure 5, is a two-page spread on which users are able to explore patient and physician testimonies. The *Get Involved* section provides users a means by which to join the donor registry or to volunteer (see Fig. 6). This was essential to the transmedia campaign because during focus groups, participants asserted that providing alternative ways to get involved was crucial in spreading awareness and increasing education about bone marrow donation. On the *Give* page, users are able to make monetary contributions.

On the *Learn More* page, users can read about the process of donating, statistics about donating, and the importance of increasing minority bone marrow donors.

Figure 4.

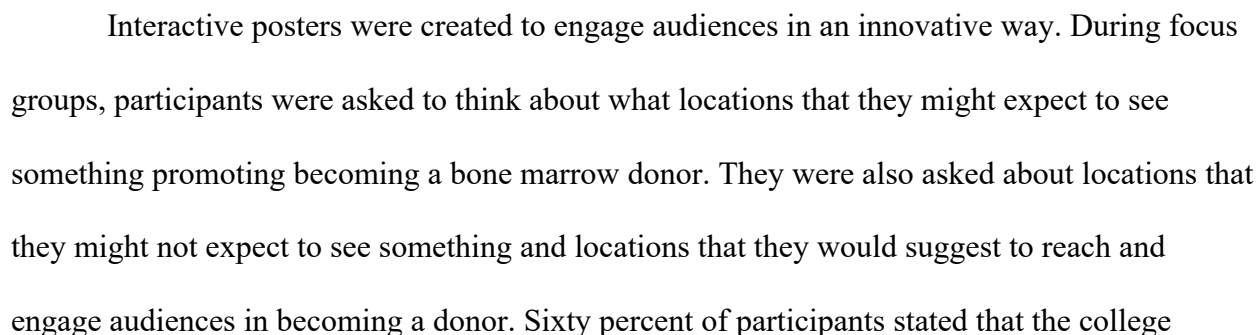
The Home page and the Donate page.



Figure 5.

The user is able to click on testimonies of patients and physicians or sign up the email list.





campus is a place that they would not expect to see something urging students to register as bone marrow donors. Likewise, half of participants said they would expect to see or hear something about bone marrow donation at church, while the other half said they wouldn't. Other locations that participants stated that they would *not* expect to see promotion of a donor registry included clubs, restaurants, coffee shops, gas stations, libraries, or grocery stores. These insights informed the creation of a distribution plan of the interactive posters. Interactive posters will be strategically placed in gas stations, on college campuses, in grocery stores, and at coffee shops. Participants noted that these particular locations are effective because they are places that audiences are waiting in line, waiting to pump gas, or waiting for class to start; so they will have time to invest and engage in this type of promotion. Once users scan the QR code with their mobile devices, a testimonial video from the website appears and users can watch the video and browse the website (see Fig. 7). After the video plays, users will be encouraged to get involved, share the video on their personal social media accounts, or join the registry.

YouTube Channel

Following ideation sessions, six types of videos were identified as being most effective for this audience: personal testimonies, physician testimonies, day in the life, how easy it is to register as a donor, before and after donating, and the process of donating. These six types of videos can also be grouped into testimonial and educational themes. As Bevan (2019) suggests, “video marketing is one of the most efficient marketing formats today, as videos are attention-grabbing, engaging and easily shareable in the current online world” (p. 3). Testimonial videos were identified as most effective because they reinforce credibility and trust, create a better emotional connection, humanize the brand, and improve exposure of content (Bevan, 2019).

Educational videos were also identified as most effective because research has shown that educational videos make it a lot easier for audiences to understand and learn various topics and ideas (Brown, 2019).

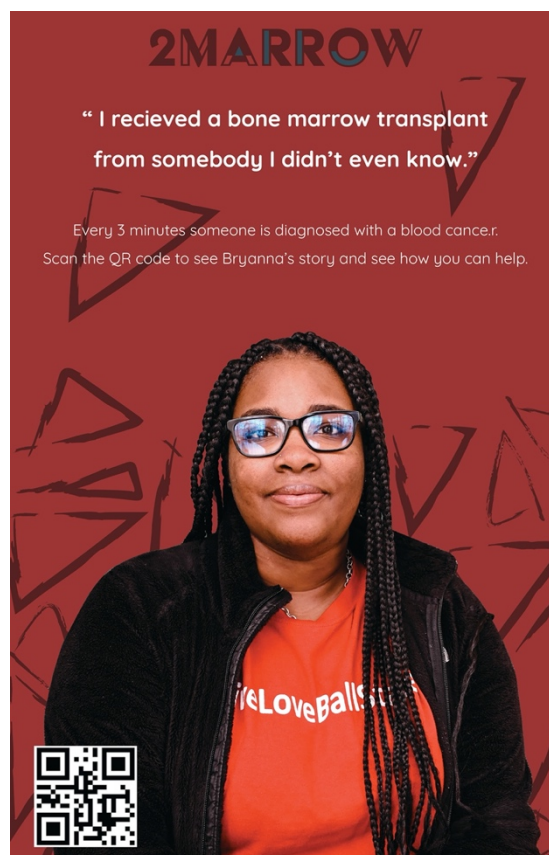
The following are the six video types and a description of what they include. These types of videos were created based on what the participants identified during the focus groups.

Personal testimonies. Personal testimony videos include faces of people who are in need of a bone marrow transplant, draws on audiences' heartstrings to make them emphasize and want to do something in response. These types of testimonies were identified from the focus groups from answers such as put faces to the topic, put faces to the topic, and to highlight the children that get them (see Fig. 8). These types of videos will be effective because they connect audiences with people who have had a bone marrow donation and put a face to the cause. A participant said that personal testimonies are like the animal shelter commercial, you feel so bad for the animals that you want to do something right then and there to help.

Physician testimonies. Physician testimony videos include addressing misperceptions of the medical community, building a relationship with medical professionals, educating audiences

Figure 7.

Users are able to scan QR codes on interactive posters to activate a testimonial video of Bryanna, who provides insights about her journey as a bone marrow recipient.



what bone marrow is and what it is used for. This type of video was identified based on focus group answers such as interviews with medical professionals, establishing a relationship with medical professionals, documenting the process, together we can. This type of video is very important because medical professionals will be able to educate audiences on what bone marrow is, how does one become a donor/ actually donate, and talk about misperceptions in the medical community better than any other profession. These videos will build a relationship with audience's that are either on the fence about donating, don't know anything about donating at all, and also to help build trust with medical professionals.

A Day-in-the-Life. A day in the life videos include content that sheds light on what people who are either about to donate bone marrow or about to receive a transplant go through in order for the procedure to happen. This type of video content was established based on participant answers that stated a day in the life, videos of the actual donation, showing what people go through, documenting the process, and what happens next? These will be effective because they educate audiences on the process of donating and show the everyday person that is going through the donation process. Participants said that a way to change the negative perceptions of donating bone marrow is to just show what is it and how patients and physicians go about donating.

Ease of Donation/Becoming a Donor. These videos provide shocking statistics of how many people are waiting for a donor and how many of those people die waiting, provide state specific statistics, shedding light on other organizations pertaining to bone marrow donation, and providing audiences with alternative ways to donate. During the focus groups participants stated that they didn't know how easy it was to register to be a donor and stated that showcasing how simple it is will be an effective way to increase donor populations. During the focus groups participants also stated that genetic statistics about donating, state specific statistics of donor

pools, shedding light on how easy it is to donate would also be effective ways to change the misperceptions people have against being a donor.

Before Donation and Life After Donation. These videos highlight success stories of people who have had a transplant and are cancer free now, showcase donors and their reasoning why they became a donor, medical professionals discussing success stories/ the difficulties of finding a match. Like the patient and physician testimonies, participants stated that creating videos of patients before and after a bone marrow transplant will highlight the effectiveness of a bone marrow donation and will encourage audiences to want to help the next person.

Showcasing the Process of Donation. Videos that show audiences the step by step process of how you become a bone marrow donor will provide insight on just how easy it is to become an initial donor. These videos will start with a medical professional swabbing the inside of your cheek to the final process of donation and life after donating. This type of video was identified due to the amount of participants that didn't even know what bone marrow is, that you could donate bone marrow, and what it was even used for. These types of videos will be effective to increase the audience's knowledge of bone marrow donation and what all is associated with it.

Social Media Campaign

The creation of the social media campaign is twofold. First, a six weeklong campaign consists of three types of content: testimonials, informational, and videos. Testimonials include patients, donors, or medical professionals, and are visual based with captions that tell the individual's story. Informational content includes statistics and difficulties of minorities finding an unrelated donor, statistics of how often people are impacted by blood cancers, how easy it is to become a bone marrow donor, and also misperceptions of donating bone marrow. Video content includes the six content themes that are highlighted on the YouTube channel: personal

Figure 8.

One video features a personal testimony from Bryanna, a patient who received a bone marrow transplant when she was five years old from somebody she didn't know.



testimonies, physician testimonies, a day in the life, how easy it is to donate bone marrow and become a donor, before donation and life after donation, and content that shows the actual process of donating bone marrow. These types of content were created from the interviews and focus groups. Participants stated that putting a face to the cause and making the audience empathize with someone's journey would be an effective way to get the audience to care and want to get involved. Participants' lack of knowledge about the topic also generated ideas for social media content. Participants stated that creating infographics and highlighting statistics to educate audiences of donating bone marrow would also be an effective way to change the misperceptions and lack of understanding that audiences have with donating bone marrow.

Secondly, a series of multiple character-driven campaigns are simultaneously being released alongside the first campaign. These character-driven campaigns include personal testimonies and have the objective to either find a bone marrow donor for themselves or for someone they know, such as a parent looking for a donor for their child. These campaigns start when someone is in need of a bone marrow donor and conclude when the donor is found. The type of content that these campaigns include are user-generated and can include background information of the person in need of a donor, information about the requirements of the donor, and the progress of the donor search. This character-driven campaign has a similar content delivery schedule that the testimonials, informational, and videos campaign does.

Concluding the focus groups, a six-week social media campaign which included 18 posts were created that followed a systemic guideline.

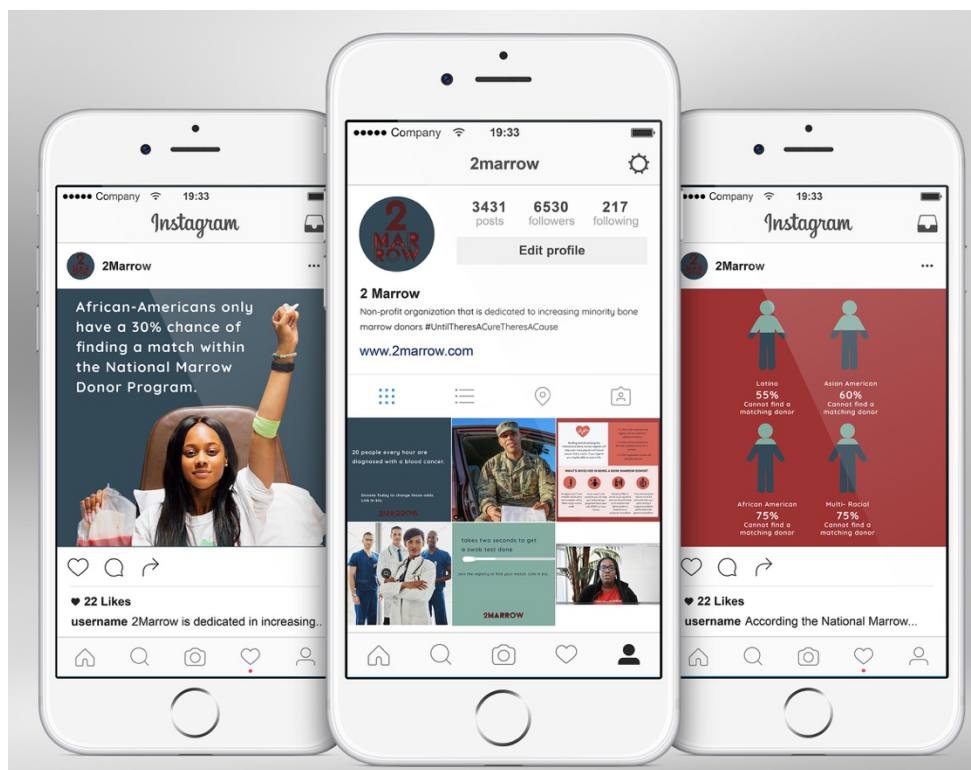
Table 2.

Schedule of content for the social media campaign.

Monday	Wednesday	Friday
Week 1. Testimony	Infographic	Video
Week 2. Infographic	Testimony	Infographic
Week 3. Video	Infographic	Testimony
Week 4. Infographic	Testimony	Infographic
Week 5. Testimony	Infographic	Video
Week 6. Infographic	Testimony	Infographic

Figure 9.

Pictured left is an informational post, middle is the profile which showcases informational, testimonies, and a video, and pictured right is another informational post. A complete set of social media posts can be found in Appendix A.

**Table 3.**

Schedule of content for the multiple character- driven campaigns. This schedule is a guideline of how the content of the campaign will be released and will repeat and continue until the bone marrow donor is found.

Monday	Wednesday	Friday
Week 1: Introduction	Testimony	Video
Week 2: Testimony	Video	Progress Report

The first social media campaign doesn't have an intended end date. Unless blood cancers are eradicated and there is no longer a need for bone marrow transplant, 2Marrow's social media

campaign will continue to educate and encourage African American minorities to become bone marrow donors. The content for this transmedia campaign was created for six weeks, however, the content is always being updated and new personal testimonies are always being created. The schedule of the campaign will remain the same, but the type of content will be replaced with the most current content instead. The series of multiple character-driven campaigns are run by users and will continue to be launched as patients are in need of a donor. As long as someone is in need of a donor, these types of campaigns will continue to be created. Both of these social media campaigns have the same underlying mission and both serve to bring awareness of donating bone marrow and hopefully encourage audiences to react and want to become donors.

Discussion

This creative project resulted in a transmedia campaign focused on changing negative perceptions of donating bone marrow in an effort to encourage and inspire minorities to become donors. This creative project investigated the reasoning behind misperceptions about bone marrow donation through interviews and ideations sessions with African American students aged 18-30. The interviews and ideation sessions helped provide a better understanding of misperceptions students had and also generated ideas for the content and platforms for the transmedia campaign, *2Marrow*. This creative project also included storytelling techniques that are educational, emotional, and persuasive to showcase the importance of bone marrow donation. A number of key themes warrant further discussion and are outlined in the following sections.

The Value of Design Thinking in Targeted Content

Design thinking methods were used to identify target audiences and understand why minorities are often averse to donating bone marrow. These methods included empathy research, transmedia storytelling, and user-centered design to ensure that target audience concerns and needs were represented in the resulting transmedia campaign. Twenty interviews and two ideation sessions resulted in identifying key words that the proposed audience associated donating bone marrow with and which factor of willingness the audience answered that would deter them from registering as a donor. This user-centered approach effectively enlightened this project in a multitude of ways. Understanding the target audiences, then designing from their perspective, produced an outcome that catered to them. The results from the ideation sessions are significant because they effectively informed *2Marrow*'s strategy because it emphasizes' with the target audience and reflects their perspective as to why they are not donating bone marrow.

A Promising Design Thinking and a Transmedia Campaign

Throughout the *2Marrow* campaign, transmedia storytelling efforts served the purpose to generate content that reached a specific audience for each platform recommended from ideation sessions. Transmedia storytelling provides the opportunity to create an unified and coordinated brand by creating different points of entry for different audience segments (Jenkins, 2007).

Brands today need to be storymakers, not storytellers. As Carmody (2016) states, “The future of digital media marketing isn't about you broadcasting your message to the masses with a digital media megaphone. It's about storymaking” (p.15).

The distribution plan of *2Marrow* effectively engages audiences because of its targeted approach to the target audience, Gen Z and millennials users. This age group is very social media orientated and in order for them to engage it's essential to “meet them where they are at, on platforms that they care about, and deliver the right message to the group” (Pepito, 2020, p. 15). The majority of content *2Marrow* provides is user generated. Testimonials from patients, physicians, and people joining the bone marrow registry are all different kinds of user-generated content that *2Marrow* uses in the transmedia storyworld. Not only does this type of content “encourage active participation from your patients and followers, but it gives you content to share, thus lessening the burden for content creation on your part. And user-generated content tends to promote engagement, not only from millennials but from your entire follower base” (Pepito, 2020, p. 22).

Additional Contributions of 2Marrow

In addition to the goal of increasing education about donating bone marrow, future components of this project will continue to encourage minorities to register as bone marrow donors or get involved in other ways, including volunteering, donating monetarily, and/or

engaging on social media. Moving forward, the *2Marrow* campaign can also be used as a platform for raising money to help cover costs for companies to register and find bone marrow donors and matches or provide monetary assistance to families that are donating who may be in need of financial help. *2Marrow* also provides opportunities for users to volunteer at blood drives and other philanthropic events with other non-profit organizations such as *Be the Match*, *Give or Life*, *Mixed Marrow*, and *the American Red Cross*. As social media efforts persist, increased education and audience reach will hopefully continue to encourage users to join the registry and learn more about the topic at hand.

Future Work

2Marrow doesn't end here. The continuation of this transmedia campaign involves a few steps. First, before the transmedia campaign goes live, design thinking strategies would be used to test the efficacy of the design elements of the campaign. Focus groups that were used in the ideation phase of the project would be used again to test the logo, colors, texture treatments, and overall design elements used throughout the entire transmedia campaign. Doing so will further validate the campaign and will ensure that the campaign is effectively representing the target audience that *2Marrow* strives to engage with. Next, the website will need to be created on a real domain such as *Squarespace*, *Wix*, or any other domain. Regular upkeep to the website will ensure the content is relevant and that users are up to date with the latest statistics and testimonies. Interactive posters will be to be printed and distributed in the destinations that the ideation sessions recommended. For the continuation of the YouTube channel, new testimonies will need to be recorded, edited, and uploaded to YouTube, social media, and the website. Comments and reviews should be regularly monitored. Social media content is to be strategically released three times per week, however there is no timeline for the duration of the post

themselves. New testimonies, statistics, and patients looking for a donor content should continue to be produced to ensure audiences are up to date with information.

Limitations

Due to limitations associated with the ability to recruit a greater number of participants and nonprobability sampling methodology for ideation sessions, the number of participants was significantly smaller than originally intended. Given more time and resources, more interviews and ideation sessions would have provided additional insight about negative misperceptions contributing to why many minorities aren't becoming bone marrow donors. Another limitation to the creative project is that the implementation of the campaign wasn't released and tested into the real world so it was not possible to assess the degree to which the Objective #2 in the paper makes. With future work to this campaign, a tested analysis can be made once *2Marrow* is implemented into the real world.

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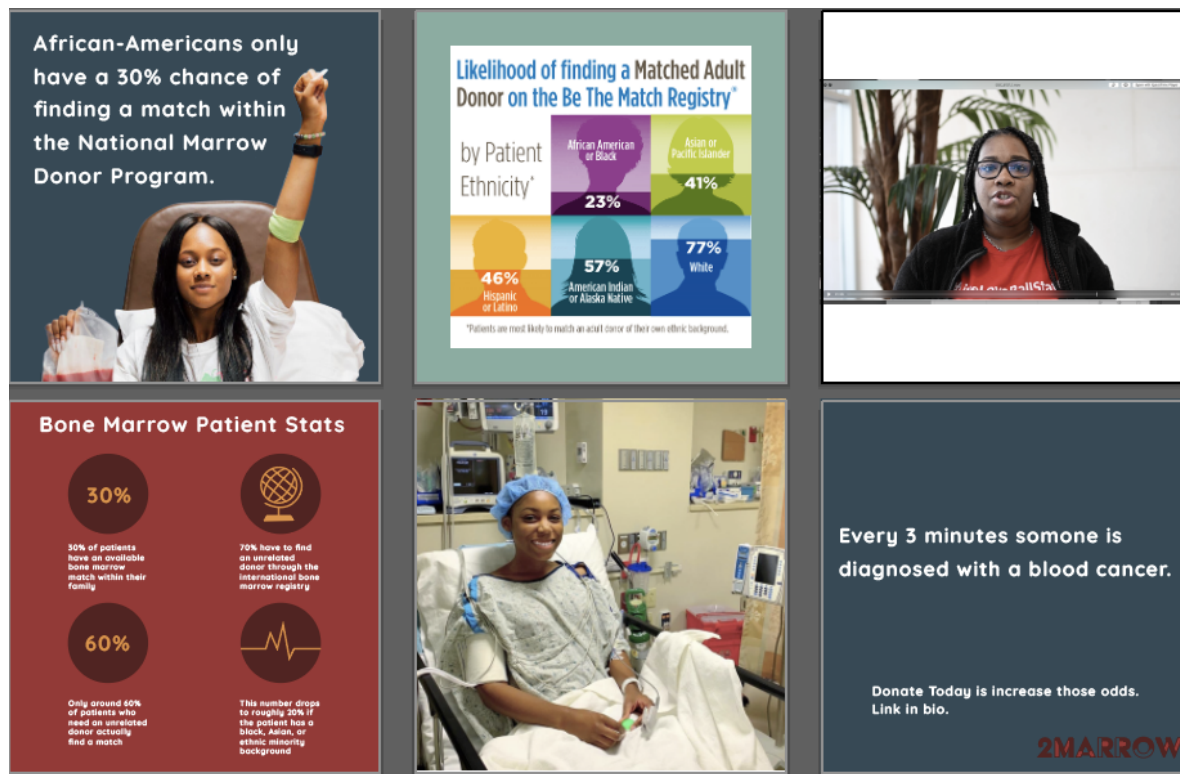
Appendix A

A: Social Media Post Captions: (based on order for Instagram)

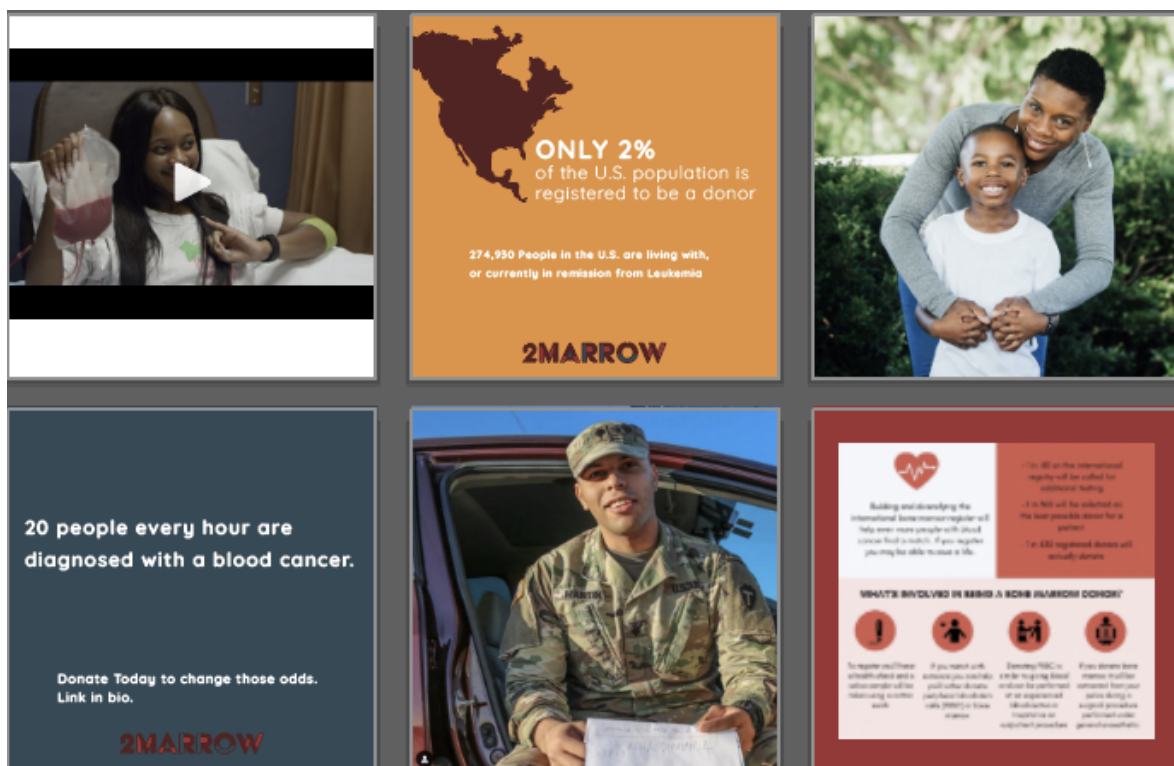
1. African Americans only have a 30% to find a match. Are you the one that someone is looking for? Click the link in our bio to learn more on how you can become a donor and SAVE someone's life.
2. Caucasians have a 77% of finding a match, our mission at 2Marrow is to increase education about what donating bone marrow is and hopefully increase minority donor populations.
3. 2Marrow is dedicated to increasing minority bone marrow populations. Take a look into the day to day life of someone who decided to become a bone marrow donor!
4. 70% of people have to find an unrelated donor through the international bone marrow registry. Click the link in our bio to learn more on how you can get involved!
5. Meet Trisha, a bone marrow donor! Trisha first found 2Marrow on here and said she felt called to do something. Trisha became a donor and not long after she received a call that she was a match to an 11-year-old boy battling leukemia. Show Trisha some love and like this post for taking the steps to save this boy's life! #2Marrow
6. Every 3 minutes someone is diagnosed with a blood cancer. Donate today to increase these odds. Link in bio.
7. Ever wonder who needs a bone marrow transplant? Meet Violet, a 20-year-old college student that is battling leukemia. Watch her story to know more about donating and how you can become a donor yourself.
8. Only 2% of the population is registered to be a bone marrow donor. If you are a donor or want to become one, comment below! #2Marrow
9. Meet David and his mamma Joan. David received a bone marrow transplant when he was three years old from an unrelated donor. His family were all tested, but none of them matched David's HLA type. After posting his story on social media, hundreds of community members joined the registry and were tested to hopefully be David's match. David finally found his match, but another three people matched with someone else and were able to donate to them! Every donor counts, if you want to learn more about how you can get involved- visit our link in the bio!
10. 20 people every hour is diagnosed with a blood cancer. So, by the time your Netflix show is over, almost 3 people's life has been changed forever. Click the link in our bio to find out how you can help! #2Marrow
11. SPC Akeem Martin changed one woman's life forever. The National Guard Soldier heroically donated stem-cells that went to a double cancer diagnosis patient! Without question, Akeem helped after hearing he was a 10/10 match. Because of his donation, the recipient is now cancer free! SPC Martin doesn't consider himself to be a hero, but wants to share his story and encourage others to

become a donor. Like Akeem, you could potentially SAVE someone's life, link the link in our bio to learn more!

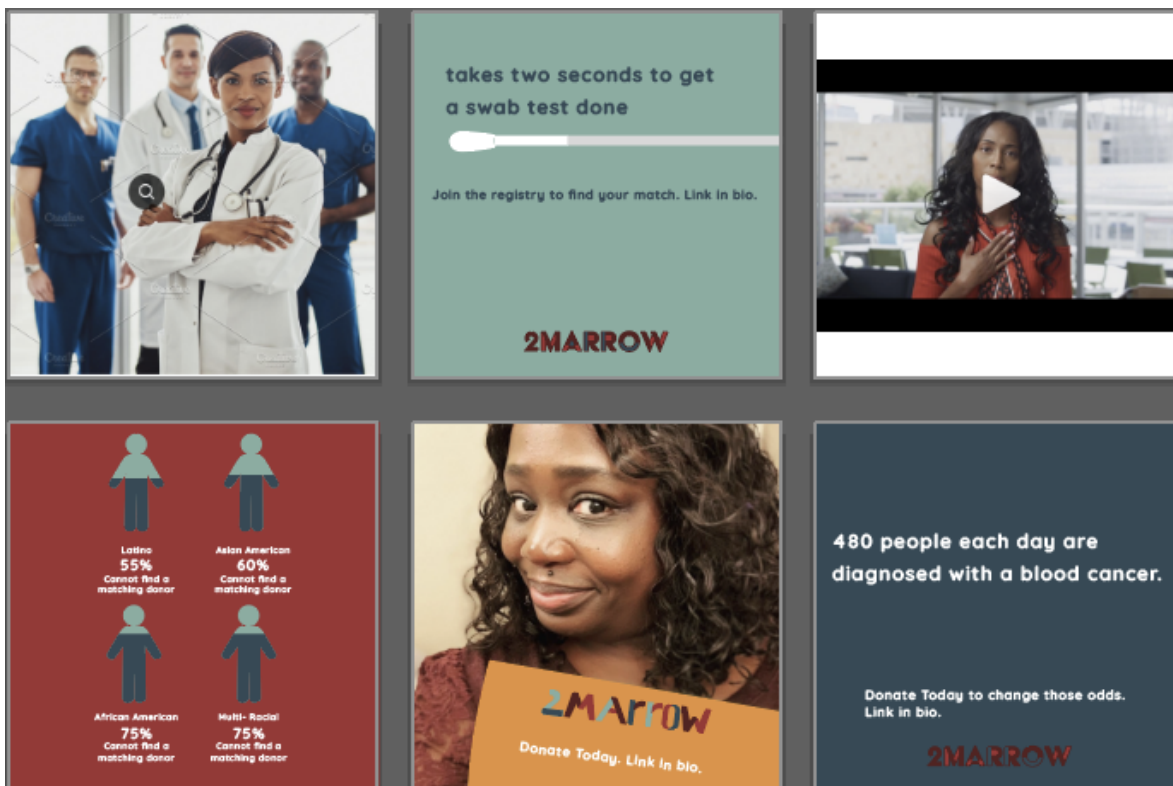
12. What is involved in being a bone marrow donor you may ask? Here we break it down for you: 1. A cotton swab is used to swab and register you 2. If you are a match to someone you will either donate peripheral blood stem cells or bone marrow 3. If you're donating peripheral blood stem cells you will donate at an experienced blood center or hospital as an outpatient procedure and 4. If you're donating bone marrow it will be extracted from your pelvis
13. Medical professionals like Katherine are dedicated to saving lives and also building relationships with her patients and the community. Katherine is going live at 7pm to share her experience and to ask any questions regarding bone marrow that you might have. See you all at 7pm tonight!
14. It only takes two seconds for someone to complete a swab test. Join the registry today to potentially save someone's life! Link in bio.
15. Meet Bryanna- she received a bone marrow transplant when she was just 5 years old. She received a bone marrow transplant from someone that went to the same school as she did. With the support of her city, Bryanna was able to find a match within two weeks. Bryanna first shared her story on *2Marrow's* website, and her story quickly went viral. Click the link in our bio to learn more about Bryanna.
16. According to the National Marrow Donor Program, 75% of African Americans can't find a matching donor. Share this post and comment with two friends to be entered for a \$100 Amazon gift card. Helping to spread the awareness of becoming a bone marrow donor one share at a time.
17. Meet Diane, 2Marrow's newest bone marrow donor. Diane saw one of 2Marrow's interactive posters while pumping gas and watched a video on how she could get involved. Before her gas was done pumping Diane clicked on the join the registry button and became a donor! Let's welcome Diane to the 2Marrow family!
18. 480 people each day are diagnosed with a blood cancer. Donate today to change these odds. Link in bio. #2Marrow



Instagram posts 1- 6 read from left to right.



Instagram posts 7-12, read from left to right.



Instagram posts 12-16, read from left to right.

Appendix B

Name: Stormie Kirby Harless
Title: Associate Director of Digital Strategy & Annual Giving
Organization: Ball State University

Project Design and Concept

Tick one of the following boxes	Excellent	Good	Poor
Please rate how well the student articulated the problem space defined for this project.	X		
Please rate the quality of the design solution developed to address the problem space.	X		
Please rate how well the objectives of the project's stated design have been met.	X		
Please rate the extent to which the project makes a significant contribution to its genre.	X		

Please provide brief comments about the overall quality of the project design and concept.

I was so impressed with the research, quality of design (especially the website), and the long-term usability of this project. This creative project provided in-depth insight to perceptions of bone marrow donation, as well as real resources that can be used to educate and increase donations. I love the tagline: "by becoming a bone marrow donor today, you could save someone's life 2Marrow."

As a person who convinced her friend to become a donor, and then he received a call just a couple of months later that they found a match, and was able to save an 11-year-old boy's life – I love and support this project! I have an interracial family and I would have never considered that certain people in my family would have even less of a chance of finding a match. I want to be a personal advocate for 2Marrow.

Research and Writing

Tick one of the following boxes	Excellent	Good	Poor
Please rate the overall quality of the writing associated with the project.		X	
Please rate the extent to which the literature review demonstrates a critical understanding of the relevant background literature for the creative project.	X		
Please rate the degree to which the writing involved meets the expectations of the field and/or genre.		X	
Please rate the overall quality of the research conducted for this project.	X		

Please provide brief comments about the overall quality of the research and writing.

I thoroughly enjoyed reading this project and am impressed by the research that was conducted. This topic is very interesting to me and I believe it has tremendous potential to be promoted long after this class. I'm really proud to know Rachel and I'm absolutely honored that I was able to read this

Name: Taylor Randall
Title: Analyst
Organization: Behavioral Progression

Project Design and Concept

Tick one of the following boxes	Excellent	Good	Poor
Please rate how well the student articulated the problem space defined for this project.	X		
Please rate the quality of the design solution developed to address the problem space.	X		
Please rate how well the objectives of the project's stated design have been met.	X		
Please rate the extent to which the project makes a significant contribution to its genre.	X		

Please provide brief comments about the overall quality of the project design and concept.

I love the visual aspect of the social media campaign. I appreciated all the attention to detail, choice of color and patterning.

- Interactive posters: I think perhaps reviewing the area to find zip codes reporting predominately black residents would help streamline location placement.
- YouTube: Previously length of videos were discussed with regard to targeting Gen Z. An effort to keep videos short as possible may be beneficial as well.

Research and Writing

Tick one of the following boxes	Excellent	Good	Poor
Please rate the overall quality of the writing associated with the project.	X		
Please rate the extent to which the literature review demonstrates a critical understanding of the relevant background literature for the creative project.	X		
Please rate the degree to which the writing involved meets the expectations of the field and/or genre.	X		
Please rate the overall quality of the research conducted for this project.	X		

Please provide brief comments about the overall quality of the research and writing.

As an African American myself, I felt that the research was overarching and targeting a needed problem in my community. The writing style was well organized, provided necessary detail, and solidified the need for this project.

- I would suggest including the demographics of participants in your "empathetic research" survey. It is unclear what race was providing this information.